



# UNIVERSITY OF EMBU

2020/ 2021 ACADEMIC YEAR

TRIMESTER EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE MASTER OF SCIENCE DEGREE IN AGRICULTURAL  
RESOURCES MANAGEMENT (ANIMALS, ECOSYSTEMS AND ENVIRONMENT)

ART 603: ENVIRONMENTAL MANAGEMENT AND POST HARVEST TECHNOLOGY

**DATE: AUGUST 11, 2021**

**TIME: 2:00-5:00PM**

**INSTRUCTIONS:**

**Answer Any TWO Questions from section A and another TWO Questions from section B.**

**QUESTION ONE (25 MARKS)**

- a) Discuss the effects of monoculture farming, continuous farming, intensive livestock farming and intensive use of farm inputs on the environment in Kenya. (20 marks)
- b) Discuss safe levels of soil erosion with reference to soil formation mechanisms. (5 marks)

**QUESTION TWO (25 MARKS)**

- a) Discuss the different types of water erosion, their causes and the measures that can reduce their occurrence. (15 marks)
- b) Discuss the on-site and off-site effect of continuous soil erosion? (10 marks)

**QUESTION THREE (25 MARKS)**

Elaborate on the following terms as used with reference to environmental management.

- a) Greenhouse gas effect and global warming (10 marks)
- b) Sequestration and control of global warming (10 marks)



ISO 27001:2013 Certified

*Knowledge Transforms*



ISO 9001:2015 Certified

c) The carbon footprint

(5 marks)

**QUESTION FOUR (25 MARKS)**

- a) Discuss foreign matter and abnormal moisture as acquired qualities of dry grain and how they might affect the marketing, storage and use of the produce. (15 marks)
- b) Explain how biological and chemical approaches can be used in the preservation of food. (10 marks)

**QUESTION FIVE (25 MARKS)**

In recent studies concerning the influence of hypobaric storage on the quality of greenhouse cucumbers, researchers study the storage of cucumbers under both varying pressure and temperature.

- a) Explain the effect if cucumbers were replaced with the tomato fruit in this study? (5 marks)
- b) Discuss the various levels of air temperature used in the hypobaric study and their effect on the storage life of the cucumbers. (10 marks)
- c) How would increasing pressure to levels above atmospheric level affect the storage properties of produce during storage? (10 marks)

**QUESTION SIX (25 MARKS)**

- a) Differentiate between a physical and a monetary type of food loss during processing and storage and discuss at least one possible cause of each type of loss. (16 marks)
- b) Clearly outline the difference between milk pasteurization and some other commercial milk treatments in terms of temperatures used and storability. (9 marks)

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